

NOV 24 2004

1 50
 rhimi SIDGGIRAAT SQEINELYY TTLSANSYCR TVIPGA...T WDC..IHCD
 rhidl SDGGKVVAAT TAQIQEFTKY AGIAATAYCR SVVPGN...K WDC..VQCQK
 SP400 ~~~~~~EVS QDLFNQFNLF AQYSAAYCG KNNDAPAGTN ITCTGNACPE
 Pcl ~~~~~~DVS TSELDQFEFW VQYAAASYYE ADYTAQVGDK LSCSKGNCP
 FoLnp11 ~~~~~~AVGVT TTDFSNFKFY IQHGAAAYC. .NSEAAAGSK ITCSNNGCPT

51 100
 rhimi TE..DLKIIK TWS.TLIYDT NAMVARGDSE KTIYIVFRGS SSIRNWIADL
 rhidl WV.PDGKIIT TFT.SLLSDT NGYVLRSDKQ KTIYLVFRGT NSFRSAITDI
 SP400 VEKADATFLY SFEDSGVGDV TGFLALDNTN KLIVLSFRGS RSIENWIGNL
 Pcl VEATGATVSY DFSDSTITDT AGYIAVDHTN SAVVLAFRGS YSVRNWVADA
 FoLnp11 VQGNGATIVT SFVG.SKTGI GGYVATDSAR KEIVVSFRGS INIRNWLTNL

101 150
 rhimi TFVVPVSY.PP VSGTKVHKGF LDSYGEVQNE LVATVLDQFK QYPSYKVAVT
 rhidl VFNFSDY.KP VKGAKVHAGF LSSYEQVND YFPVVQEQLT AHPTYKVIVT
 SP400 NFDLKEINDI CSGCRGHDGF TSSWRSVADT LRQKVEDAVR EHPDYRVVFT
 Pcl TFVHTNP.GL CDGCLAEGLF WSSWKLVRDD IIKELKEVVA QNPNEYLVVV
 FoLnp11 DFGQEDC.SL VSGCGVHSGF QRAWNEISSQ ATAAVASARK ANPSFNVIST

151 200
 rhimi GHSLGGATAL LCALDLYQRE EGLSSSNLFL YTQGQPRVGD PAFANYVVST
 rhidl GHSLGGAQAL LAGMDLYQRE PRLSPKNLSI FTVGGPVGN PTFAYYVEST
 SP400 GHSLGGALAT VAGADLRGN. .GY..DIDV FSYGAPRGN RAFAEFLTVQ
 Pcl GHSLGAAVAT LAATDLRGK. .GYP..SAKL YAYASPRVGN AALAKYITAQ
 FoLnp11 GHSLGGAVAV LAAANLRVG. .GT...PVDI YTYGSPRGN AQLSAFVSNQ

201 250
 rhimi G.IPYRRTVN ERDIVPHLPP AAFGFLHAGE EYWITD.NSPETVQ
 rhidl G.IPFQRTVH KRDIVPHVPP QSFGFLHPGV ESWIKS.GT.SNVQ
 SP400 TGGTLYRITH TNDIVPRLPP REFGYSHSSP EYWIKS.GTL V.PVTRNDIV
 Pcl G..NNFRFTH TNDPVPKLPL LSMGYVHVSP EYWITS.PNN A.TVSTSDIK
 FoLnp11 A.GGEYRVTH ADDPVPRLPP LIFGYRHTTP EFWLSGGGD KVDYTISDVK

251 300
 rhimi VCTSDLETSD CSNSIVPFT. .SVLDHLSYF GINTGLCT~~ ~~~~~~
 rhidl ICTSEIETKD CSNSIVPFT. .SILDHLSYF DINEGSCL~~ ~~~~~~
 SP400 KIEGID.ATG GNNQP.NIP. .DIPAHLWYF .GLIGTCL~~ ~~~~~~
 Pcl VIDGDV.SFD GNTGTGLPLL TDFEAHIWYF .VQVDAGKGP GLPFKRV~~~
 FoLnp11 VCEGAA.NLG CNGGT.LGL. .DIAAHLHYF .QATDACNAG GFSWRRYRSA

301 338
 rhimi ~~~~~~ ~~~~~~ ~~~~~~ ~~~~~~ ...
 rhidl ~~~~~~ ~~~~~~ ~~~~~~ ~~~~~~ ...
 SP400 ~~~~~~ ~~~~~~ ~~~~~~ ~~~~~~ ...
 Pcl ~~~~~~ ~~~~~~ ~~~~~~ ~~~~~~ ...
 FoLnp11 ESVDKRATMT DAELEKKLNS YVQMDKEYVK NNQARS..

Fig. 1**Alignment of lipase sequences**